

REMARKS

Claims 7 and 24 have been canceled without prejudice or disclaimer of the subject matter thereof. Applicants reserve the right to pursue the subject matter of the canceled claims in the subject application and/or subsequently filed continuing applications.

Claims 1, 4, 14, 19 - 23, 25 - 27, 30 - 31, 33, 36, and 38 have been amended.

Claims 1 - 6, 8 - 23, and 25 - 40 are present in the subject application.

In the Office Action dated January 21, 2011, the Examiner has indicated that claims 14 - 15 and 31 - 32 contain patentable subject matter, has rejected claims 1, 4, 9 - 12, 19, 21, 26 - 29, and 36 under 35 U.S.C. §102(e), and has rejected claims 1 - 10, 13, 16 - 27, 30, and 33 - 40 under 35 U.S.C. §103(a). Favorable reconsideration of the subject application is respectfully requested in view of the following remarks.

ALLOWABLE SUBJECT MATTER

The Examiner has objected to claims 14 - 15 and 31 - 32 as being dependent upon a rejected base claim, but further indicated that these claims would be allowable if rewritten in independent form. Accordingly, claims 14 and 31 have been rewritten in independent form and, along with their corresponding dependent claims 15 and 32, are considered to be in condition for allowance.

REJECTION UNDER 35 U.S.C. §102

The Examiner has rejected claims 1, 4, 9 - 12, 19, 21, 26 - 29, and 36 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2004/0047307 (Yoon et al.).

Briefly, a present invention embodiment is directed towards synchronizing time of day (TOD) information between radio nodes of a network and detecting and merging otherwise isolated radio networks. In this manner, individual isolated networks are able to start when they are ready and once connectivity is detected with another network, the two networks can merge. Radio nodes within each network periodically send out TOD messages and periodically receive TOD messages issued by other nodes to identify networks within communication range. Upon detecting another network, a radio node informs a central control node that uses network detection information received from its members to determine the extent of the connectivity between the two networks and whether to merge the two networks. Network searching is optimized to limit impact on the overall network performance, resulting in little or no degradation in network performance.

The Examiner takes the position that all of the features recited in these claims are disclosed by the Yoon et al. publication.

This rejection is respectfully traversed. However, in order to expedite prosecution of the subject application, independent claims 1, 19, and 36 have been amended, and recite the features of: joining a communication unit to an existing communication network at power up from among a plurality of existing communication networks each with a different Time Of Day

synchronization mode, and starting an isolated network with neighboring communication units in response to failure to join the communication unit to at least one of the existing communication networks; the network containing the communication unit including a plurality of communication units and the neighboring communication network including a plurality of communication nodes or units; determining merge control parameters to control merger between the network containing the communication unit and operating in a first Time Of Day synchronization mode and a neighboring communication network operating in a second Time Of Day synchronization mode that is different from the first mode; and merging of the network containing the communication unit with the neighboring communication network in accordance with the merge control parameters.

The Yoon et al. publication does not disclose, teach or suggest these features. Rather, the Yoon et al. publication discloses a wireless communications network including multiple nodes, and a local node having GPS-based time for synchronization of time-of-day (TOD) in the network. The network includes at least the local node and a neighbor node communicating in the network. The local node includes a clock generator for generating a local TOD, and a time management unit, coupled to the clock generator, for adjusting the local TOD. A receiver in the local node receives from the neighbor node a message including a neighbor TOD. A counter in the local node computes and provides an integer value corresponding to a number of update values for synchronization of the neighbor TOD to the GPS-based time. A transmitter in the local node transmits to the neighbor node the integer value provided by the counter, whereby the time management unit adjusts the local TOD to the neighbor TOD and then transmits the adjusted

local TOD and the integer value to the neighbor node for synchronization of the neighbor TOD to the GPS-based time.

Thus, the Yoon et al. publication discloses a “flywheel” technique that allows nodes to continue to track the movement of network time as adjusted by neighboring nodes. This technique enables a roaming radio node with local GPS to synchronize with existing (non-GPS based) net time, immediately, and slowly pull the net time toward GPS based time (e.g., as discussed in the Specification of the subject application at Page 3, line 30 to Page 4, line 2). Accordingly, there is no disclosure, teaching or suggestion of merging networks each utilizing a different Time Of Day synchronization mode or, for that matter, forming an isolated network in response to failure of a communication unit to join existing networks with different Time Of Day synchronization modes, determining merge control parameters for merging networks (the isolated or existing networks being merged with a neighboring communication network with each network including a plurality of communication units) with different Time Of Day synchronization modes, and merging the networks in accordance with those parameters as recited in the independent claims. In fact, the Office Action concedes this point since claims 7 and 24 recited similar features, and were not rejected based on the Yoon et al. publication.

Since the Yoon et al. publication does not disclose, teach or suggest the features recited within independent claims 1, 19, and 36 as discussed above, these claims are considered to overcome the rejection.

Dependent claims 4, 9 - 12, 21, and 26 - 29 depend, either directly or indirectly, from independent claims 1 or 19 and, therefore, include all the limitations of their parent claims.

Claims 4, 21, and 26 - 27 have been amended for further clarification and/or consistency with their amended parent claims. The dependent claims are considered to overcome the rejection for substantially the same reasons discussed above in relation to their parent claims, and for further limitations recited in the dependent claims.

REJECTION OF CLAIMS 1 - 10, 13, 16, 19 - 27, 30, 33, AND 36 - 38 UNDER 35 U.S.C. §103

The Examiner has rejected claims 1 - 10, 13, 16, 19 - 27, 30, 33, and 36 - 38 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2001/0029166 (Rune et al.) in view of U.S. Patent Application Publication No. 2002/0059434 (Karaoguz et al.). This rejection is considered moot with respect to canceled claims 7 and 24.

Briefly, a present invention embodiment is directed towards synchronizing time of day (TOD) information between radio nodes of a network and detecting and merging otherwise isolated radio networks as described above.

The Examiner takes the position that the Rune et al. publication discloses the claimed subject matter, except for the communication unit operating in a First Time of Day synchronization mode and a neighboring communication network operating in a second Time of Day synchronization mode that is different from the first mode. The Examiner further alleges that the Karaoguz et al. publication teaches these features, and that it would have been obvious to combine the Rune et al. and Karaoguz et al. publications to attain the claimed invention.

This rejection is respectfully traversed. As discussed above, independent claims 1, 19, and 36 have been amended, and recite the features of: joining a communication unit to an

existing communication network at power up from among a plurality of existing communication networks each with a different Time Of Day synchronization mode, and starting an isolated network with neighboring communication units in response to failure to join the communication unit to at least one of the existing communication networks; the network containing the communication unit including a plurality of communication units and the neighboring communication network including a plurality of communication nodes or units; determining merge control parameters to control merger between the network containing the communication unit and operating in a first Time Of Day synchronization mode and a neighboring communication network operating in a second Time Of Day synchronization mode that is different from the first mode; and merging of the network containing the communication unit with the neighboring communication network in accordance with the merge control parameters.

The Rune et al. publication does not disclose, teach or suggest these features. Rather, the Rune et al. publication discloses intelligent piconet forming. When connecting a unit to one or more existing ad hoc wireless networks comprising several units (e.g., the units adapted to communicate according to the Bluetooth specification and the network then being formed according to the same specification to comprise one or more piconets), a unit can discover the units which are the masters in the networks, and then connect as a slave to those masters.

Thus, the Rune et al. publication discloses forming of networks with the same specification. Accordingly, there is no disclosure, teaching or suggestion of forming an isolated network in response to failure of a communication unit to join existing networks with different Time Of Day synchronization modes, determining merge control parameters for merging

networks (the isolated or existing networks being merged with a neighboring communication network with each network including a plurality of communication units) with different Time Of Day synchronization modes, and merging the networks in accordance with those parameters as recited in the independent claims. In fact, the Examiner concedes that the Rune et al. publication does not disclose a communication unit operating in a First Time of Day synchronization mode and a neighboring communication network operating in a second Time of Day synchronization mode that is different from the first mode at Page 8 of the Office Action.

The Karaoguz et al. publication does not compensate for the deficiencies of the Rune et al. publication. Rather, the Karaoguz et al. publication discloses techniques for controlling and managing network access that are used to enable a wireless communication device to selectively communicate with several wireless networks. A portable communication device constructed according to the invention can communicate with different networks as the device is moved through the areas of coverage supported by the different networks. As a result, the device can take advantage of services provided by a particular network when the device is within the area of coverage provided by that network. A multi-mode controller in the device may be used to alternately poll different networks to determine whether the device is within the area of coverage of a network and to selectively establish communications with those networks.

Thus, the Karaoguz et al. publication discloses a wireless communication device that communicates with different networks as the device moves through different coverage areas. Accordingly, there is no disclosure, teaching or suggestion of merging networks each utilizing a different Time Of Day synchronization mode or, for that matter, forming an isolated network in

response to failure of a communication unit to join existing networks with different Time Of Day synchronization modes, determining merge control parameters for merging networks (the isolated or existing networks being merged with a neighboring communication network with each network including a plurality of communication units) with different Time Of Day synchronization modes, and merging the networks in accordance with those parameters as recited in the independent claims.

Since the Rune et al. and Karaoguz et al. publications do not disclose, teach or suggest, either alone or in combination, the features recited within independent claims 1, 19, and 36 as discussed above, these claims are considered to be in condition for allowance.

Dependent claims 2 - 10, 13, 16, 20 - 27, 30, 33, and 37 - 38 depend, either directly or indirectly, from independent claims 1, 19, or 36 and, therefore, include all the limitations of their parent claims. Claims 4, 20 - 23, 25 - 27, 30, 33, and 38 have been amended for further clarification and/or consistency with their amended parent claims. The dependent claims are considered to overcome the rejection for substantially the same reasons discussed above in relation to their parent claims, and for further limitations recited in the dependent claims.

REJECTION OF CLAIMS 17 - 18, 34 - 35, and 39 - 40 UNDER 35 U.S.C. §103

The Examiner has rejected claims 17 - 18, 34 - 35, and 39 - 40 under 35 U.S.C. §103(a) as being unpatentable over the combination of the Rune et al. and Karaoguz et al. publications, and further in view of U.S. Patent Application Publication No. 2004/0033778 (Fonseca et al.).

Briefly, a present invention embodiment is directed towards synchronizing time of day (TOD) information between radio nodes of a network and detecting and merging otherwise isolated radio networks as described above.

The Examiner takes the position that the combination of the Rune et al. and Karaoguz et al. publications discloses the claimed subject matter, except for the feature of comparing a number of active communication units in the neighboring communication network with a number of total communication units in the neighboring communication network. The Examiner further alleges that the Fonseca et al. publication teaches this feature, and that it would have been obvious to combine the teachings of the Rune et al., Karaoguz et al., and Fonseca et al. publications to attain the claimed invention.

This rejection is respectfully traversed. Initially, claims 17 - 18, 34 - 35, and 39 - 40 depend, either directly or indirectly, from independent claims 1, 19, or 36 and, therefore, include all the limitations of their parent claims. As discussed above, the combination of the Rune et al. and Karaoguz et al. publications does not disclose, teach or suggest the features of forming an isolated network in response to failure of a communication unit to join existing networks with different Time Of Day synchronization modes, determining merge control parameters for merging networks (the isolated or existing networks being merged with a neighboring communication network with each network including a plurality of communication units) with different Time Of Day synchronization modes, and merging the networks in accordance with those parameters as recited in the claims.

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The Fonseca et al. publication does not compensate for the deficiencies of the Rune et al. and Karaoguz et al. publications. Rather, the Fonseca et al. publication discloses a method and apparatus for relaying information between two separate networks sharing a relaying remote unit, and is merely utilized by the Examiner for an alleged teaching of having more active users in a network and that, as the percentage of active users increases, there is reduction in average power consumption.

Since the Rune et al., Karaoguz et al., and Fonseca et al. publications do not disclose, teach or suggest, either alone or in combination, the features recited in claims 17 - 18, 34 - 35, and 39 - 40, these claims are considered to be in condition for allowance.

In view of the foregoing, Applicants respectfully request the Examiner to find the application to be in condition for allowance with claims 1 - 6, 8 - 23, and 25 - 40. However, if for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Applicants hereby petition for any extension of time that may be necessary to maintain the pendency of this application. The Commissioner is hereby authorized to charge payment of any additional fees required for the above-identified application or credit any overpayment to Deposit Account No. 05-0460.

AMENDMENT IN RESPONSE TO FINAL OFFICE ACTION MAILED JANUARY 21, 2011
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